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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,428	07/21/2003	Ligang Lu	YOR920030210US1	6431

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EXAMINER

ANYIKIRE, CHIKAODILI E

ART UNIT	PAPER NUMBER
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2621

MAIL DATE	DELIVERY MODE
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05/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/624,428	Applicant(s) LU ET AL.	
	Examiner CHIKAODILI E. ANYIKIRE	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application is responsive to application number (10624428) filed on July 27, 2003. Claims 1-14 are pending and have been examined.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 17, 2009 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumua et al (US 5,675,387) in view of Yoshioka et al (US 6,310,921).

As per **claim 1**, disclose a decoding power aware encoding method for generating a predicatively encoded data stream, in which predictions, that result in a reduction in the amount of reference data transferred from the secondary memory to primary memory during the decoding process, are favored, said method for favoring certain predictions comprising:

(a) providing a primary memory model (Fig 8 element 511) for transfer of data from secondary memory (Fig 8 element 111) incorporating a memory management (Fig 8 element 110) in the decoding process;

(b) finding at least one candidate that is a match between a current block of an input data sequence and said reference data located in said primary memory model (paragraph [0018] lines 4-9; finding a candidate is inherent in the MPEG2 process relating to motion estimation); and

(c) assigning quality and rate measures to each said candidate (paragraph [0131]; Matsumua teaches that the quantization step is adjusted according to a parameter. The quantization step changes the rate and quality with which an image is process; and

(d) based on said assigned measures , choosing a particular one of the candidates to reduce said secondary memory accesses of said decoder (paragraph

[0018] lines 4-9; finding a candidate is inherent in the MPEG2 process relating to motion estimation).

Regarding **claim 2**, arguments analogous to those presented for claim 1 are applicable for claim 2.

As per **claim 3**, Matsumua discloses a method for decoding a coded data stream comprising:

(a) processing the coded data stream to produce outputted decoded data frames (paragraph [0009]);

(b) transmitting signals to and receiving first signals from an external memory (Fig 8 element 111) for storage and retrieval of previously decoded reference data frames (paragraph [0019] lines 7-10 and paragraph [0138] lines 2-5; Matsumua teaches that reference data is read/written from the external memory).

(c) transmitting signals to and receiving second signals from a primary memory, which is dedicated for storage of previously decoded reference data frames obtained from an external memory, and wherein said signals retrieve selected ones of said previously decoded reference data frames (paragraph [0019] lines 7-10, paragraph [0138] lines 5-10 and paragraph [0139]; Matsumua teaches that part or all of the data which concludes that the signal may only receive a selected ones of reference frames and that the external memory and internal memory are connected by a memory interface); and

(d) searching said primary memory for prediction data of a current being decoded, wherein step (a) uses said prediction data in decoding (paragraph [0139];

Matsumua teaches that the data from the primary memory (internal memory) is used for a motion predicting process, which produces prediction data).

As per **claim 4**, Matsumua et al disclose a system for decoding a coded data stream comprising:

- (a) a processor that outputs the decoded data frames (paragraph [0009]);
- (b) an external memory that stores prediction data for decoding said coded data stream (Fig 8, element 111; paragraph [0008] lines 4-7);
- (c) an internal primary memory (Fig 8 element 511) having a high speed access relative to a lower speed access of the external memory (Fig 8 element 111; paragraph [0144]), wherein said internal primary memory is dedicated to storage of prediction data obtained from said external memory and (paragraph [0139]; Matsumua discloses that the internal memory and the external memory are connected and transfer information between each other through the memory interface), and
- (d) a memory management manager (Fig 8 element 110) that decreases an amount of traffic to the external memory (Fig 8 element 111) so as to provide better real-time performance and power saving by a connection arrangement for transmissions (paragraph [0144] and [0145]) from said processor to the external memories and said internal primary memory, wherein said internal primary memory is dedicated to a motion compensation function of data decoding (paragraph [0139]; Matsumua teaches that the data from the primary memory (internal memory) is used for a motion predicting process, which produces prediction data)..

As per **claim 6**, Matsumua teaches a system as defined in claim 4, wherein said processor receives the coded data stream at its input, and has an output respectively connected to said external and internal primary memories and a further output providing decoded data frames (paragraph [0013]-[0015]; the video signal input/output is connected to coder/decoder which is connected to the memory interface, which is connected to the internal and external memory).

Regarding **claim 7**, arguments analogous to those presented for claim 4 are applicable for claim 7.

Further, Matsumua teaches (b) a motion compensator comprising a memory that stores a reference data frame as well as data frame being decoded currently (Fig 8 element 104; paragraph [0007] lines 4-6; it is inherent that motion compensator holds so form of memory to perform prediction of the current and reference data).

As per **claim 10**, arguments analogous to those presented for the rejection of claims 3 and 4 are applicable to the rejection claim 10.

Allowable Subject Matter

6. Claims 11-12 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 8-9 and 13-14 allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621
/Chikaodili E Anyikire/
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